

Listing of Claims:

Claim 1 (withdrawn): An optical fiber diffuser comprising an optical fiber having a light transmitting core and a nanoporous silica cladding, wherein a section of said nanoporous cladding is modified to create scattering sites.

Claim 2 (currently amended): The optical fiber diffuser ~~according to claim 1 comprising an optical fiber having a light transmitting core and a nanoporous silica cladding, wherein a section of said nanoporous cladding is modified to create scattering sites, and~~ wherein said modification of said section of said nanoporous silica cladding is at least partially consolidating said section at a distal end of said optical fiber by heat energy.

Claim 3 (currently amended): The optical fiber diffuser according to claim [1] 2, wherein said modification of said section of said nanoporous silica cladding is treating said cladding section with a light scattering compound.

Claim 4 (original): The optical fiber diffuser according to claim 3, wherein said light scattering compound is selected from a group consisting of titanium dioxide, aluminum oxide, diamond dust, powdered sapphire, powdered zirconia and powdered quartz.

Claim 5 (previously presented): The optical fiber diffuser according to claim 2, wherein said nanoporous silica cladding section has been treated with a light scattering compound prior to said consolidation.

Claim 6 (original): The optical fiber diffuser according to claim 5, wherein said a light scattering compound has a radial distribution after consolidation.

Claim 7 (original): The optical fiber diffuser according to claim 5, wherein said diffuser has a gradient index over its length.

Claim 8 (original): The optical fiber diffuser according to claim 5, wherein said diffuser has a step index, having clearly defined refractive index regions over its length.

Claim 9 (original): The optical fiber diffuser according to claim 2, wherein said nanoporous silica cladding is consolidated into one or more spirals at a distal end of said optical fiber.

Claim 10 (original): The optical fiber diffuser according to claim 2, wherein said nanoporous silica cladding is consolidated into one or more rings at a distal end of said optical fiber.

Claim 11 (currently amended): The optical fiber diffuser according to claim [1] 2, wherein the shape of said diffuser is selected from a group consisting of cylindrical, elliptical, spherical, and custom shapes.

Claim 12 (original): The optical fiber diffuser according to claim 11, having a cylindrical shape, and wherein a mirror is secured to a polished distal end of said diffuser.

Claim 13 (original): The optical fiber diffuser according to claim 12, wherein said mirror is secured and produced by vapor deposition of a reflective metal.

Claims 14-20 (previously withdrawn)

Claim 21 (previously presented) The optical fiber diffuser according to claim 2, wherein said diffuser has a gradient index over its length.